The University of New Hampshire Law Review

Volume 12
Number 1 *University of New Hampshire Law Review*

Article 7

January 2014

Securitize Me: Stimulating Renewable Energy Financing by Embracing the Capital Markets

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Securitize Me: Stimulating Renewable Energy Financing by Embracing the Capital Markets

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The current system of financing renewable energy projects is broken and inadequate, especially when compared to the framework for participating in oil and gas ventures. The solution lies in borrowing accepted energy business practices and adapting them to solar and wind energy projects. This Article focuses on the current issues facing renewable energy project financing in the United States, analyzes failed attempts to stimulate growth, and presents the securitization of renewable energy assets as a solution. Drawing on current legal structure and debates from the corporate sphere, this Article also discusses specific securitization techniques that can help to democratize and grow investment in renewable energy projects.

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* Trinity College, B.A. 2007; University of Connecticut School of Law, J.D. 2013. I would like to thank Professor Joseph MacDougald for his invaluable guidance and support. All errors contained herein are mine and mine alone.

INTRODUCTION

The United States has designed a renewable energy incentive system that emphasizes tax equity financing as a stimulator for private renewable energy financing. A tax-based incentive structure, however, is too small and narrow to accommodate the necessary scale of development needed to transition the U.S. from a fossil fuel-dependent country to a renewable energy independent nation. The current framework is unreliable and poorly designed, resulting in renewable energy projects that are severely handicapped when competing against their fossil fuel counterparts. While the recent financial crisis has given securitization a poor public reputation, this tool, once a financial innovation and now often a mainstream industry practice, can keep costs of renewable project financing low and permit renewable output to compete on a level playing field with other types of energy.

In this Article, I argue that legislators should recognize the comparatively thin subsidies they have provided to the renewable energy industry and stop wasting their efforts with short-term tax credit commitments. Instead, legislators should pursue a proven route of market stimulation success: securitization. The three most suitable options for securitization include (1) creating a green Asset-Backed Security ("ABS") in the model of securitized mortgages; (2) developing a renewable energy Real Estate Investment Trust ("REIT"); and (3) opening Master Limited Partnerships ("MLP") to renewable energy projects. Not only are investors familiar with these investment structures, ABSs, REITs, and MLPs have track records of success in providing consistent returns, enhanced liquidity, and reduction in financing costs.

This Article proceeds in three parts. Part I discusses the inefficiencies of the government's current commitment to renewable energy,[1] particularly with respect to its reliance on the tax code for providing growth incentives. In Part II, I present a brief history of securitization theory. Part III considers what securitization means for today's renewable energy markets and how ABSs, REITs, and MLPs can help to promote renewable energy financing. I conclude by urging lawmakers to choose one of these proven tools to promote energy independence and reduce carbon emissions in the United States.

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1. Throughout this Article, when discussing *renewable energy*, I am referring to solar and wind projects primarily because of the volume of their transactions and widespread dependence on tax equity investors, although certain other types of projects, if financing is similar, may also apply. When I use the term renewable energy *project* or *development*, I am referring to existing implementation technologies accompanied by power purchase agreements.

I. WE CAN DO BETTER: THE CURRENT STATE OF RENEWABLE ENERGY FINANCING

A. Overview of Renewable Energy Financing

Currently, the most utilized types of project financing are not per se deficient and, in fact, have a great number of benefits for a diverse array of projects. They simply do not, alone or in combination, adequately support renewable energy projects. There are four types of financing that a renewable energy project will use, either exclusively or in some combination: (1) tax equity funding; (2) project finance debt; (3) grants; and (4) non-tax equity funding.[2]

Tax equity financing involves a passive ownership interest from a large financial institution in the renewable energy development "where [the] investor receives a return based not only on cash flow from the asset or project but also on federal and state income tax benefits."[3] Tax equity financing effectively allocates the incentive tax breaks to the investors who, unlike the developers, have the appropriate "passive" profits to use them.[4] These passive profits are vital, as tax credits can offset only passive income.[5] Passive income typically means that the investor is not involved in the day-to-day operations.[6] Investors may also receive a share of the project's revenues or an equity ownership portion in the project.[7]

Two tax equity financing structures are currently in use: flip partnerships and sale-leaseback models.[8] In the flip partnership model, the tax equity investor, which is usually the most significant capital contributor, combines with the developer to form a partnership or limited liability company for tax purposes.[9] The partnership has near complete ownership of the development until a predetermined circumstance "flips" the ownership to the project

2. Jeffrey Sun, *Financing for Solar Deals in the U.S.*, ACORE 5 (May 2012), http://www.acore.org/wp-content/uploads/2012/05/Jeffrey-Sun.pdf.

3. Jack Cargas, *U.S. Renewable Energy Tax Equity Investment and the Treasury Cash Grant Program*, U.S. PREF 1 (Dec. 2011), http://reffwallstreet.com/us-pref/wp-content/uploads/2011/06/RE-Tax-Equity-v2.1.pdf.

4. *Id.*

5. Mark Bolinger, *Revealing the Hidden Value that the Federal Investment Tax Credit and Treasury Cash Grant Provide to Community Wind Projects*, LAWRENCE BERKELEY NAT'L LAB. 15 (Jan. 2010), http://emp.lbl.gov/sites/all/files/lbnl-2909e.pdf.

6. *Id.*

7. *Id.* at 16.

8. David Miller & Daniel Mulcahy, *Investment in Alternative Energy After the End of Cash Grants*, CADWALADER, WICKERSHAM & TAFT LLP 1 (Sept. 6, 2011), http://www.cadwalader.com/resources/clients-friends-memos/investment-in-alternative-energy-after-the-end-of-cash-grants.

9. *Id.*

developer.[10] These agreements, with durations of five or ten years, are drafted to maximize usage of capital and tax credits.[11] Sale leasebacks involve a renewable energy project developer selling the project's assets to a tax equity investor, who then leases them back to the developer while agreeing to be responsible for the operating expenses.[12] Deciding between the flip partnership and the sale leaseback depends on "the type of credits, the nature of the renewable energy property, the cost of the property, the projected energy production and sales from the facility, the equity investor's tax capacity and available debt structures."[13] Tax equity financing "has been the bedrock of renewable energy power for a decade,"[14] and is discussed in greater depth in Part I.D.

Generally, project finance is a borrowing structure described as the "financing of long-term infrastructure, industrial projects and public services based upon a non-recourse or limited recourse financial structure, where project debt and equity used to finance the project are paid back from the cash flow generated by the project."[15] The most common benefits of project finance are: "(i) the non-recourse nature of the debt; (ii) the ability of the project's sponsors to maximize their equity leverage while maximizing any tax benefits; and (iii) the ability to provide off-balance sheet treatment."[16] In the renewable energy context, the loan is made to a Special Purpose Vehicle ("SPV"), whose sole business is building, owning, and operating the specific project.[17] Renewable energy developers use project finance to build their infrastructure before they can utilize the benefits of the tax credits.[18] Project finance structures are typically used in conjunction with a tax equity investor, who also provides funding to the SPV.[19]

Cash grants are a form of government funding and likely the most favorable financing source from the developer's perspective, although they are in short supply. Section 1603 of the American Recovery and Reinvestment Act (AARA) of 2009[20] was the primary grant available for supplementing renewable energy project financing and has a stated purpose

10. Peter Vidani, *Tax Equity for Renewables, Wind: Historical Trends and Projections* (Dec. 27, 2011), http://forrestthroughthetrees.tumblr.com/post/14892768599/tax-equity-for-renewables-wind-historical-trends-and.
11. *Id.*
12. *Id.*
13. Miller & Mulcahy, *supra* note 8, at 5.
14. *Id.* at 1.
15. Katharine C. Baragona, *Project Finance*, 18 TRANSNAT'L LAW. 139, 140 (2004).
16. *Id.*
17. Sun, *supra* note 2, at 6.
18. *Id.*
19. *Id.* at 7.
20. Pub. L. No. 111-5, 123 Stat. 115 (2009).

of "reimburs[ing] eligible applicants for a portion of the cost of installing specified energy property used in a trade or business or for the production of income."[21] The cash grant, which expired in 2012, was provided to commercial and utility solar developers in place of tax credits (specifically investment tax credits),[22] and thus was a mechanism for helping developers to avoid the difficulties of tax equity investor-dependence.[23] In the short time it was in existence, the Section 1603 program awarded $11.6 billion to almost 38,000 projects in all 50 states, supporting $38.6 billion in total investments.[24] While both the cash grant and the ITC represent thirty percent of the total cost of the project, Section 1603 had the appeal of giving the recipient cash regardless of whether the project was profitable enough to pay taxes during the installation year.[25] Unfortunately, and perhaps unsurprisingly given the theme of U.S. renewable energy commitment, it fell victim to politics and was not renewed in 2012.[26] And so the dependence on tax equity partnerships continues.

Non-tax equity funding, or sponsor loans, can help to fill any "gaps" left by the previous three mechanisms.[27] However, this source has its own set of difficulties and limitations, most notably the high cost of financing or a requirement of equity ownership, which often results in unavailability to the developer.

Let us look at a hypothetical solar developer's project as an example of how the funding and development process works. An individual, perhaps a homeowner or business seeking to install rooftop solar cells, leases the solar equipment from a solar developer and signs a power-purchase-agreement (PPA) with the solar developer to receive electricity for a set duration, usually at or below market price.[28] Essentially, the individual homeowner or

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21. *Recovery Act, 1603 Program: Payments for Specified Energy Property in Lieu of Tax Credits*, U.S. DEP'T OF THE TREASURY, http://www.treasury.gov/initiatives/recovery/Pages/1603.aspx (last visited Dec. 6, 2013).

22. Sun, *supra* note 2, at 5.

23. Cargas, *supra* note 3, at 1.

24. Michael Mendelsohn & John Harper, *§1603 Treasury Grant Expiration: Industry Insight on Financing and Market Implications*, NAT'L RENEWABLE ENERGY LAB. 22 (June 2012), http://www.nrel.gov/docs/fy12osti/53720.pdf.

25. Tor Valenza, *Why the 1603 Treasury Grant Program Matters to Solar and RE*, RENEWABLEENERGYWORLD.COM (Mar. 16, 2012), http://www.renewableenergyworld.com/rea/blog/post/2012/03/26-senators-go-on-the-record-we-dont-support-solar-jobs-or-any-renewable-energy-jobs.

26. Cheryl Kaften, *U.S. Congress "Pulls the Plug" on Section 1603 Treasury Program*, PV MAG. (Jan. 3, 2012), http://www.pv-magazine.com/news/details/beitrag/us-congress-pulls-the-plug-on-section-1603-treasury-program_100005372/#axzz2hS31n2Og.

27. Sun, *supra* note 2, at 5.

28. *See Green Power Partnership: Solar Power Purchase Agreements*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/greenpower/buygp/solarpower.htm (last visited Dec. 6, 2013)

business owner is buying the services produced by the solar cells, as opposed to the solar cells themselves. The installation is appealing to the individual because of the little capital required,[29] the competitive energy rates provided, and the satisfaction of consuming clean energy. The solar developer ultimately benefits from the income stream generated from the lease and the PPA, as well as the tax incentives in place and any applicable renewable energy credits.[30] A tax equity investor will likely partner with the solar developer to form an SPV, which will "function as the legal entity that receives and distributes to the investor payments from the sale of the systems kWh output and tax benefits."[31] Of course, if the solar developer does not locate enough funding through the various channels previously discussed, then it cannot purchase the solar cells to lease to the individual.

B. The Renewable Energy Handicap

By comparison, renewable energy has not received the same subsidy support as oil, coal, or natural gas and is, in a sense, handicapped when compared to other types of energy. Before I discuss the deficiencies of the specific tax incentive policies that are in place to promote renewable energy growth, it is worth noting that, simply on a level of scale, the commitment in the U.S. to non-renewable energy dwarfs that of its support of renewables. Any discussion of the failure of renewable energy to stand on its own two feet after years of assistance should be considered in light of the incredible welfare given to fossil fuel generation. While the U.S. prides itself on the promotion of free-market enterprise and unfettered capitalism, the national energy market has evolved into the very structure we denounce—that of a Botoxed, buoyed, and rigged industry where risk is swallowed by the taxpayers. Adding new product sources to this industry becomes incredibly difficult. The playing field is tilted against any new energy source, and in particular, renewable energy sources.

In a recent study conducted by Nancy Pfund, Managing Partner at DBL Investors, and Ben Healey, a graduate student at Yale University School of Management and School of Forestry and Environmental Studies, oil and gas industries were found to have an average annual support of $4.9 billion (from 1918 to 2009) and nuclear received $3.5 billion (from 1947 to 1999), while

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[hereinafter *Green Power Partnership*].

29. *See Solar Power Purchase Agreements (PPAs)*, ONE BLOCK OFF THE GRID, http://solarfinancing.1bog.org/solar-power-ppas-power-purchase-agreements/ (last visited Dec. 6, 2013) (discussing the "no-to-low money down" typically required for PPAs).

30. *See Green Power Partnership*, *supra* note 28.

31. *Id.*

renewable support was just $0.4 billion (from 1994 to 2009).[32] Aggregated over these time periods, total support for oil and gas industries totaled $447 billion compared to just $5.9 billion over the much shorter period.[33] Perhaps more telling is the government support in the early industry stages. Looking at first fifteen years of subsidy life, oil and gas industry received average annual support of $1.8 billion, nuclear received $3.3 billion per year, and renewables averaged just $0.4 billion.[34] Additionally, federal protections like the Price-Anderson Act provide enormous indemnification benefits to nuclear power plants,[35] effectively minimizing the majority of investment risk in arguably the riskiest energy market.

The tax incentives and other protections implemented for nuclear and oil and gas were established to, arguably, help the industry expand when it was, at the time, too small to be competitive itself.[36] Energy markets are unique in that they require an incredible amount of infrastructure to survive; economies of scale play a significantly larger role in infrastructure-dependent industries than they do elsewhere.[37] Subsequently, renewable energy support should be increased or, at the very least, become a consistent policy commitment upon which investors can rely as the renewable energy infrastructure expands and the energy market playing field is leveled.

C. Risk Born from Short-Term Commitments

The federal government's inconsistent commitment to renewable energy growth is the largest risk factor investors consider when evaluating a potential solar or wind investment. The threat of expiring tax credits is enough to deter any reasonable investor, tax equity or otherwise. Dependence on Congress, which holds the key to renewal of these incentives, scares away any consistent and sizeable investor base that might provide support to a project that is dependent on these credits.

The Federal Production Tax Credit (PTC), established by the Energy Policy Act of 1992, authorizes Section 45 of the Internal Revenue Code to provide a ten-year production tax credit for certain renewable energy projects, including: wind, biomass, geothermal, landfill gas, municipal solid

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32. Nancy Pfund & Ben Healey, *What Would Jefferson Do? The Historical Role of Federal Subsidies in Shaping America's Energy Future*, DBL INVESTORS 29 (Sept. 2011), http://www.dblinvestors.com/documents/What-Would-Jefferson-Do-Final-Version.pdf.

33. *Id.*

34. *Id.* at 6.

35. Taylor Meehan, *Lessons from the Price-Anderson Nuclear Industry Indemnity Act for Future Clean Energy Compensation Models*, 18 CONN. INS. L. J. 339, 343–49 (2011).

36. *See* Pfund & Healey, *supra* note 32, at 6.

37. *Id.* at 34.

waste, qualified hydropower, and marine and hydrokinetic facilities.[38] Wind energy has benefitted more than any other energy group from this tax credit and, largely due to the PTC, the U.S. has become a world leader in wind power installation.[39] Specifically, the PTC provides a subsidy of 2.2 cents per kilowatt hour to producers of electricity from wind turbines.[40] Unfortunately, the PTC is short-term in its legislative design and has to be renewed every one to two years.[41] Lawmakers scrambled to renew the PTC in 2013, highlighting the industry's job creation.

While 37,000 jobs depend on the wind industry, a one-year extension of the PTC costs taxpayers $12 billion.[42] In 1999, 2001, and 2003—years in which the subsidies faced non-renewal—U.S. new wind capacity decreased by over seventy-five percent from each prior year, and similar uncertainty based financing shortfalls have occurred in the solar development market.[43] This uncertainty has led to "boom and bust cycles in renewable energy development, under-investment in manufacturing capacity in the U.S., and variability in equipment and supply costs."[44]

Section 48 of the Internal Revenue Code provides a Federal Investment Tax Credit (ITC) for certain commercial energy projects, including solar, fuel cells, small wind projects, geothermal, microturbines, and combined heat and power projects.[45] The solar projects, as well as the fuel cell projects, are eligible for a federal income tax reduction equal to thirty percent of the project's qualifying costs.[46] In 2009, President Obama's stimulus package permitted PTC-eligible projects to elect ITC benefits and ITC-eligible projects to elect a cash grant of equal value.[47]

Even Congress's efforts to alleviate tax equity dependency through the Section 1603 grant were short-lived.[48] Despite supporting roughly 50,000 to 70,000 direct and indirect jobs between 2009 and 2011 and producing $26

38. Mark Bolinger et al., *PTC, ITC, or Cash Grant? An Analysis of the Choice Facing Renewable Power Projects in the United States*, NAT'L RENEWABLE ENERGY LAB. 1 (Mar. 2009), http://www.nrel.gov/docs/fy09osti/45359.pdf [hereinafter Bolinger et al.].

39. Ryan Wiser, Mark Bolinger & Galen Barbose, *Using the Federal Production Tax Credit to Build a Durable Market for Wind Power in the United States*, LAWRENCE BERKELEY NAT'L LAB. 1 (Nov. 2007), http://eetd.lbl.gov/sites/all/files/publications/report-lbnl-63583.pdf.

40. Steve Goreham, *A Subsidy That's Blowin' in the Wind*, WASH. TIMES CMNTYS. (Nov. 26, 2012), http://communities.washingtontimes.com/neighborhood/climatism-watching-climate-science/2012/nov/26/subsidy-s-blowin-wind/.

41. *Id.*

42. *Id.*

43. Cargas, *supra* note 3, at 1–2.

44. Pfund & Healey, *supra* note 32, at 27.

45. Bolinger et al., *supra* note 38, at 1.

46. Goreham, *supra* note 40.

47. *Id.*

48. *See supra* Part I.A.

billion to $44 billion in economic output against $9.6 billion in expenditure,[49] the cash grant expired in October 2012.

There are no financial innovations that can alleviate the risk deterrence involved with an uncommitted government. And without the infrastructure in place, renewable energy cannot compete with existing technology, most of which was or still is heavily subsidized by the federal government.

D. There Are Only So Many Tax Equity Players

Renewable energy developers' dependency on tax equity investors is, along with insufficient and inconsistent government support, the largest impediment to renewable energy funding growth. Renewable energy's reliance on tax credits has been accurately described as "handcuffing" the entire industry.[50] The government's reliance on the tax code to promote renewable energy projects is poorly constructed, limits the potential investor pool, drives up financing costs, and subsequently restricts renewable energy growth. Supply of capital, not demand of financing, is the issue. As Marshal Salant, managing director of Citigroup Global Markets Inc., recently said, "[t]here's more demand for tax equity to finance renewable energy projects than we will ever have in the way of supply."[51]

As I have previously discussed, renewable energy developers must partner with tax equity investors to take advantage of the tax credits incentives in place.[52] Tax equity investors are usually large financial entities, such as banks, insurance companies, or utility affiliates.[53] These sophisticated investors use the PTC and the ITC to offset passive income tax liabilities. The Internal Revenue Service (IRS), in an effort to prevent wealthy individuals from creating more tax shelters, dictates that if an individual earns tax credits from investments that he does not "materially participate in" (such as investing in a wind or solar farm), then he can only

49. Daniel Steinberg, Gian Porro & Marshall Goldberg, *Prelminary Analysis of the Jobs and Economic Impacts of Renewable Energy Projects Supported by the §1603 Treasury Grant Program*, NAT'L RENEWABLE ENERGY LAB. 16 (Apr. 2012) http://www.nrel.gov/docs/fy12osti/52739.pdf. *See also* Lisa Linowes, *Section 1603 Grant Extension: Just Say No*, MASTERRESOURCE (Dec. 5, 2011), http://www.masterresource.org/2011/12/section-1603-extension-no/.

50. John Farrell, *Federal Tax Credits Handcuff Clean Energy Development*, INST. FOR LOCAL SELF-RELIANCE (Dec. 5, 2011), http://www.ilsr.org/federal-tax-credits-handcuff-clean-energy-development/.

51. Andrew Herndon, *Clean-Energy Funding to Drop After Obama Grant Ends*, BLOOMBERG NEWS (Nov. 30, 2011), http://www.businessweek.com/news/2011-11-30/clean-energy-funding-to-drop-after-obama-grant-program-ends.html.

52. *See supra* Part I.A.

53. Cargas, *supra* note 3, at 1.

utilize those credits to offset taxes that he pays on the same kind of income (such as renting property).[54] Both activities are considered passive. Since few Americans have sizeable passive income, few Americans can effectively invest in renewable energy projects.[55] As a result, the potential investor pool in renewable energy projects is incredibly limited.

According to the NREL, the present framework of tax incentives and tax equity financing dependence limits the pool of investors to a select few financial institutions and others who: (1) have a substantial current and future tax liability; (2) have the financial acumen to engage in a complex project structure; (3) are willing to hold their ownership interests in the projects for several years; (4) are able to invest in illiquid assets; (5) are willing to invest in non-core assets rather than the firm's primary mission, debt reduction, shareholder dividends, or retaining cash for a contingency; (6) are sufficiently sophisticated to account for a shifting tax policy environment in their investment decisions; and (7) are comfortable with modest returns generally earned by tax equity.[56]

These desired characteristics result in a small investor pool. Between 2008 and 2009, the number of tax equity investors shrunk from roughly twenty to eight or nine due to the financial crisis.[57] This number has since risen to twenty-two.[58] According to a survey carried out by the U.S. Partnership for Renewable Energy Finance, just $3.6 billion of tax equity financing would be available for renewable energy projects in 2012.[59] The tax equity market typically contracts and expands with accounting profitability and the desire for companies to offset taxable gains and income in any given year.[60]

Tax equity transactions are also incredibly expensive which, in turn, drives up the project financing costs. Tax equity partners often demand a

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54. John Farrell, *Why "Passive Activities" May Be Clean Energy's Biggest Hurdle*, INST. FOR LOCAL SELF-RELIANCE (Mar. 12, 2012), http://www.ilsr.org/passive-activities-clean-energys-biggest-hurdle/ [hereinafter Farrell, *Passive Activities*].

55. *Id.*

56. Mendelsohn & Harper, *supra* note 24, at 9. Unlike most corporations, financial companies are highly leveraged, which increases the value of the tax equity investment. *Id.*

57. Bolinger et al., *supra* note 38, at 10.

58. *State of the Tax Equity Market*, CHADBOURNE & PARKE LLP 2 (Mar. 2012), http://www.chadbourne.com/files/Publication/27976b63-2445-4b3d-b0615de6bd8ff546/Presentation/PublicationAttachment/e345e7fc-b5e9-4d15-97715fff15df4921/StateofTaxEquity_Mar12.pdf.

59. *Solar Energy Securitization on the Horizon as Industry Players Look for New Finance Vehicles*, CLEANTECHNICA (May 18, 2012), http://cleantechnica.com/2012/05/18/solar-energy-securitization-on-the-horizon-as-industry-players-look-for-new-finance-vehicles/ [hereinafter CLEANTECHNICA].

60. *Id.*

thirty percent return on their equity, if not more.[61] The cost of structuring a tax equity deal is estimated at a minimum of $400,000, which pushes up the desired project-size to become cost-effective for the tax equity investor.[62] Because of this necessary scale, projects under $30 million are not desirable to tax equity investors.[63] This equates to a higher startup cost to solar projects, due solely to the difficulties of project financing and entirely independent of the actual cost of producing electricity. If these costs were lowered (and they likely can be with market liquidity), renewable energy output would be better positioned for access to capital and significant growth.

Additionally, local ownership of renewable energy projects—e.g., local ownership in the form of cooperatives, schools, or cities—is limited by a dependence on tax credits because the incentives are available only for taxable entities.[64] By limiting this investor pool to tax equity investors, a large population of investors is excluded, most notably tax-exempt pension funds and retail investors.[65]

Pension funds, in particular, could be a boon to renewable energy financing. These funds account for $33.3 trillion in the U.S. investment marketplace alone, and even more abroad.[66] Pension funds' appetites for renewable energy may go beyond simple diversification: socially responsible investment funds (SRIs), which incorporate societal goals and ethics along with their mission of investment returns, are on the rise, and now represent almost $4 trillion in potential capital alone.[67] SRI pension fund exposure to renewable energy projects is surprisingly low—less than one percent—due, in large part, to lack of liquidity and appropriate investment vehicles.[68]

Additionally, the dependency on tax equity and institutional investors limits the opportunities for small to mid-size developments because these

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61. John Farrell, *Could Securitization Democratize Solar Power?*, RENEWABLEENERGYWORLD.COM (July 23, 2012), http://www.renewableenergyworld.com/rea/blog/post/2012/07/could-securitization-democratize-solar-power.

62. Ian R. Miller, *Barriers to Tax Equity Syndication for Solar Development*, ACORE 7–8 (Spring 2012), http://www.acore.org/wp-content/uploads/2012/07/Tax-Equity-Barriers.IanMiller.InternSpring2012.pdf.

63. *Id.*

64. Farrell, *Passive Activities*, *supra* note 54.

65. Felix Mormann & Dan Reicher, Op-Ed., *How to Make Renewable Energy Competitive*, N.Y. TIMES (June 1, 2012), http://www.nytimes.com/2012/06/02/opinion/how-to-make-renewable-energy-competitive.html?pagewanted=all&_r=0.

66. *SRI Basics*, U.S. SIF, http://www.ussif.org/content.asp?contentid=37 (last visited Dec. 6, 2013).

67. *Id.*

68. Raffaele Della Croce et al., *The Role of Pension Funds in Financing Green Growth Initiatives*, OECD 6 (Sept. 2011), http://www.climatebonds.net/wp-content/uploads/2011/09/OECD_Role_of_PFs_in_Financing_GreenGrowth-WP10.pdf.

financial players typically have high minimum investment standards that block all but the largest developments.[69] Bundling these developments through securitization, however, would not only achieve reaching new investor pools, but would also help to provide greater access to capital for the mid- and small-sized developments.[70]

Poor design has limited the potential for renewable energy funding growth. Proven financial innovation tools, such as securitization, are available to reduce the tax equity-dependency and democratize investment opportunities in renewable energy projects.

II. SECURITIZATION THEORY

In order to understand how securitization tools can help to stimulate renewable energy funding, an overview of securitization theory is necessary. Despite its derivatives being the creation of would-be rocket scientists turned Wall Street financiers, securitization, in its simplest form, means the pooling of assets into one security and marketing it to investors. It involves taking a single financial cash flow producing asset, such as a loan, pooling it together with other similar assets based on statistical analysis of criteria including leaseholders' credit quality and the geographic distribution of leases,[71] and selling the package of pooled assets to an investor. The act of securitization is considered by some to be the most important financial innovation of the last part of the twentieth century.[72] It has gone from innovation to a mainstream financing vehicle in the last twenty to thirty years.[73]

Securitization is attractive because of its benefits to borrowers, lenders, and investors. Securitization allows banks and non-financial institutions to obtain liquidity from assets that are otherwise illiquid.[74] Ultimately, this lowers the total risk of each lender, which, in turn, allows each lender to hypothetically secure more similar loans from the reduced risk and the new funds received from the sale of that particular asset. Additionally, because lenders are typically vertically integrated, they often duplicate services; securitization "tends to increase the number of specialized participants competing at various stages of the lending and funding process and

69. Paul Schwabe et al., *Mobilizing Public Markets to Finance Renewable Energy Projects: Insights from Expert Stakeholders*, NAT'L RENEWABLE ENERGY LAB. 3 (June 2012), http://www.nrel.gov/docs/fy12osti/55021.pdf.

70. *Id.*

71. CLEANTECHNICA, *supra* note 59.

72. *See* Alfredo Martín-Oliver & Jesus Santana, *Why Do Banks Securitize Assets?*, FIN. INNOVATION 2 (Nov. 2007), http://www.finance-innovation.org/risk08/files/3433996.pdf.

73. CLEANTECHNICA, *supra* note 59.

74. Martín-Oliver & Santana, *supra* note 72, at 2.

encourages new entrants and price and product competition,"[75] which helps to drive down financing costs for the borrower.

In the real estate mortgage world, an investor is unlikely to purchase a security that guarantees just the mortgage payments for one homeowner. However, if you package thousands of homeowners' mortgages, the risk of default is spread amongst the pool, making it more appetizing for an investor.[76]

Securitization provides asset diversification for the investor, both within and across asset classes, while also permitting bank intermediaries to free up capital on their balance sheets. Rather than holding the financial assets to maturity, the lenders can offload them by selling them to investors.[77] Securitization also places the burden of credit risk assessment on the bond buyers, which is typically done through the major U.S. credit rating agencies, the very agencies that enabled the subprime market to grow and then spectacularly implode.[78]

Securitization, or more generally, structured finance, first began to appear in the 1970s.[79] Fannie Mae was created in 1938 following the real estate collapse during the Great Depression to purchase mortgages when funds are not available and to sell mortgages when funds are abundant to provide liquidity for the mortgage market.[80] In 1968, Congress split Fannie Mae into two entities: a redesigned Fannie Mae and Ginnie Mae.[81] Ginnie Mae was designed to purchase nonconventional insured mortgages.[82] The new Fannie Mae became a federally chartered corporation that bought conventional home mortgages from private lenders, the hope being that this new private entity would provide a "low-cost source of funds for lenders wishing to offer conventional, non-governmental insured mortgages."[83] Ginnie Mae, whose current mission is to expand affordable housing by "linking global capital markets to the nation's housing markets,"[84] was

75. LEON KENDALL, A PRIMER ON SECURITIZATION 12–13 (1996).

76. Michael Mendelsohn, *Securitization: A Dirty Word, or a New Opportunity for Renewable Energy*, NAT'L RENEWABLE ENERGY LAB. (Nov. 28, 2011, 4:32 PM), https://financere.nrel.gov/finance/content/securitization-and-secondary-markets-renewable-energy [hereinafter Mendelsohn, *Dirty Word*].

77. CLEANTECHNICA, *supra* note 59.

78. *Id.*

79. Steven L. Schwarcz, *Structured Finance: The New Way to Securitize Assets*, 11 CARDOZO L. REV. 607, 608 (1990).

80. *Id.*

81. Christopher L. Peterson, *Predatory Structured Finance*, 28 CARDOZO L. REV. 2185, 2198 (2007).

82. *Id.*

83. *Id.*

84. *Frequently Asked Questions (FAQs)*, GINNIE MAE, http://www.ginniemae.gov/Pages/faq.aspx?cat=Consumer%20Education&subcat=Ginnie%20Mae%20&pagestart=1 (last visited

initially created to purchase the unconventional government insured loans.[85] Shortly after its creation, however, Ginnie Mae engaged in the first large-scale structured finance, or what we know today as securitization.[86] This entity was responsible for the first structured finance innovations, trading "pass-through" mortgage securities in which the investor purchased a fractional undivided interest in an aggregated pool of mortgage loans and, in return, received a share of the interest income generated by the aggregated loans.[87] As the originator, mortgage lenders would aggregate the pools of loans that had similar characteristics (e.g., quality, term, and interest rate).[88] After the pool was placed in a trust, certificates of ownership were sold to investors, either through a government agency, private conduit, or direct placement.[89] Investors would then receive the income from these pooled loans.[90] Freddie Mac, which was created in 1970, served a similar function as Fannie Mae.[91]

These new pass-through investment vehicles permitted investors to possess a diversified share of a large number of securities insured by the government (through Ginnie Mae) or guaranteed by the Fannie Mae and Freddie Mac as Government-Sponsored-Enterprises (GSEs).[92] Investors viewed these packaged securities as low risk investments because of the GSE backstop.[93] Ultimately, this innovation permitted the capital markets to "directly invest in American home ownership at a lower cost than the older depository lending model of business."[94]

According to structured finance scholar Leon Kendall, there are seven basic requirements of successful securitization programs: (1) standardized contracts; (2) grading of risk though underwriting; (3) database of historic statistics; (4) standardization of applicable laws; (5) standardization of servicer quality; (6) reliable supply of quality credit enhancers; and (7) computers to handle complexity of analysis.[95]

There is no secondary market for renewable energy projects as there is for auto loans, home mortgages, student loans, or even credit cards.[96] As a

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Dec. 6, 2013).

85. Peterson, *supra* note 81, at 2198.
86. *Id.*
87. Schwarcz, *supra* note 79, at 609.
88. *Id.*
89. *Id.*
90. *Id.*
91. *See* Peterson, *supra* note 81, at 2198.
92. *Id.*
93. *Id.* at 2198–99.
94. *Id.*
95. KENDALL, *supra* note 75, at 7.
96. Mendelsohn, *Dirty Word*, *supra* note 76.

result, the required returns of renewable energy investments stay private, "making it impossible to comparison shop."[97] Additionally, investors, lenders, and borrowers suffer due to illiquid markets, high financing costs, reduced availability of capital, and limited investor choice and opportunity.[98]

III. RENEWABLE ENERGY SECURITIZED

The consistent payment structure of power purchase agreements and solar leases makes these obligations attractive for securitization. In the renewable energy markets, "securitized debt has the potential to provide better pricing and a longer tenor than bank loans."[99] Institutional investors and everyday Americans invest in mutual funds comprised of stocks and bonds without much concern. Investing in a solar security is also a low-risk, low-reward instrument. As one solar installation company owner has said, "[t]he economy is full of people who have too much money and those that don't have enough. The securitization fixes an enormous inefficiency."[100] While the number of securitization issues has decreased across all asset classes following the credit crisis, interest in unique or esoteric asset classes, which would include solar equipment and related power purchase agreements or lease receivables, has increased due to the higher yields attached to such asset classes.[101] Securitization "also offers the ability for a sponsor, by 'ring fencing' the solar assets in a separate limited-purpose debt-issuing entity, to obtain financing through bonds that are rated higher than its own credit rating as an operating company."[102]

All three proposals described below—a green ABS, REITs, and MLPs—would benefit from the same industry features to increase transparency and reduce risk. First, standardization of transactions and contractual forms would make a large impact in risk assessment. Various PPA forms and regulatory structures at the federal, state, and local level create a maze of potential risk from the investor's perspective. Additionally, once standardized, the longer the duration of the PPA, the longer the duration of the income stream and, thus, the more desirable that particular asset will be

97. *Id.*

98. *See id.* at 13 (discussing the benefits for consumer-borrowers, originators, investors, and Wall Street).

99. Jeffrey Chester et al., *Financing Renewable Energy Projects and the Potential for Securitization*, KAYE SCHOLER LLP 3 (June 2011), http://www.kayescholer.com/news/publications/20111031/_res/id=sa_File1/chester_fellerhoff_tan_10312011.pdf.

100. Steve Hargreaves, *Selling the Solar-Backed Security*, CNNMONEY (May 25, 2011, 11:21 PM), http://money.cnn.com/2011/05/25/news/companies/solar_backed_security/index.htm.

101. Chester et al., *supra* note 99, at 3.

102. *Id.*

to securitization. Regulatory standardization between states and the federal government would also help to streamline the risk assessment and, ultimately, the security transaction. Historical data of the income and default risk from those individual transactions will also be useful as investors and ratings agencies evaluate the packaged security. Ratings agencies can take the initiative in providing the due diligence that investors may not be able, or willing, to do.[103] And of course, decreased dependency on uncertain tax credits will help to reduce risk. Assuming these credits stay in place, reduced dependency will happen through increased funding, hopefully achieved through securitization and the ultimate expansion of renewable energy infrastructure.

Part III analyzes in some depth the three initiatives that should be pursued to effectively bridge the renewable energy markets with the capital markets through securitization: green ABSs, REITs, and green MLPs.

A. Green Asset-Backed Securities

A green asset-backed security would be formed similarly to the mortgage ABS described above and facilitated by the GSEs, but would be a structured financial compiled from the income streams from renewable energy equipment leases or power purchase agreements. The solar market, for example, is ripe for pure securitization in the asset-backed security model. It "has matured over the last few years and there are now originators or developers in the distributed generation sector with a track record and proven ability to originate transactions with customers in both residential and commercial."[104] These developers typically install and service equipment, entering into long-term power purchase agreements with customers.[105] The equipment leases tend to be long-term leases with regularly scheduled rent payments.[106] "A portfolio of such leases and/or power purchase contracts can provide a potential issuer with a steady and diversified stream of cash flows to provide collateral support and service payments under the securitized debt."[107] Additionally, the volume of transactions, with the increasing use of standardized contracts, creates a more diversified and commoditized pool of assets that can be analyzed on a portfolio basis as opposed to asset-by-asset.[108] These analyses will provide rating agencies with historical performance data, a crucial component to the ratings process

103. Schwabe et al., *supra* note 69, at 2–4.
104. Chester et al., *supra* note 99, at 4.
105. *Id.*
106. *Id.*
107. *Id.*
108. *Id.*

and the marketability of the security.[109] Furthermore, the solar panels themselves are commoditized units that are readily available and replaceable in the event of loss or technical failure.[110] If used as collateral in securitization, the solar panels would accordingly have more readily determinable or predictable liquidation values as well.[111]

Let us take a look at how securitization would affect solar installations and how a green asset-backed security would be formed. A residential solar developer may have 10,000 signed leases, each paying a fixed amount for their electricity every month.[112] Securitization of these leases would have three immediate benefits to the renewable energy industry. First, the solar developer could sell those leases to a pension fund or retail investor, recapitalize, and then provide, assuming adequate demand, additional leases to customers looking to install solar panels in their homes.[113] Second, the developer, whose backers are currently large banks acting as tax equity financiers, could diversify its investor base and potentially reach new investors who want to stimulate the developer's growth.[114] Lastly, securitizing the leases spreads the risk of default among the buyers of the securities.[115]

This model is, to some extent, very close to being utilized. Companies like SolarCity and Sungevity have robust residential solar businesses and are considering selling solar securities in this model.[116] Compiling reliable usage and payment history will be essential to building the foundation of a liquid and thriving green ABS market.

The National Renewable Energy Laboratory (NREL), through funding from the Department of Energy, is working to "build consensus among industry players to standardize contracts, develop datasets to assess performance and payment risk, and harmonize public utility commission regulations to foster a common set of requirements across state jurisdictions . . . [and] to enable the market to access low-cost capital through easily tradable securities."[117] The benefits of securitization are clear, established,

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109. *Id.*
110. Chester et al., *supra* note 99, at 4.
111. *Id.*
112. Hargreaves, *supra* note 100.
113. *Id.*
114. *Id.*
115. *Id.*
116. *See* Chris Meehan, *Solar Leasing Companies May Securitize Assets*, CLEANENERGYAUTHORITY.COM (June 1, 2011), http://www.cleanenergyauthority.com/solar-energy-news/companies-consider-securitizing-solar-leases-060111/.
117. Michael Mendelsohn, *How Do We Lower Solar Installation Costs and Open the Market to Securitized Portfolios: Standardize and Harmonize*, RENEWABLE ENERGY PROJECT FIN. (Nov. 7, 2012, 9:00 AM), https://financere.nrel.gov/finance/content/how-do-we-lower-

and recognized by investors.

The formation of a green GSE may help stimulate the flow of credit to the renewable energy industry through an implied guarantee of the federal government.[118] These GSEs would help originators package renewable energy loans or power purchase agreements into mortgage-backed securities by providing credit guarantees to those particular securities.[119] They would also use any available funds they raise themselves to purchase the green ABSs.[120] These actions would help to build a robust and liquid market for green ABS. The design for this model is nothing innovative—it is the same model used by Fannie Mae and Freddie Mac.[121]

B. Real Estate Investment Trusts

REITs can provide many of the same benefits as the pure securitization, green ABS model, but this established investment structure reaches the goals in different ways, and needs some assistance from the IRS to succeed. This section discusses: (1) REIT structure basics; (2) a historical overview of REIT structure and investments; and (3) how REITs can be applied to renewable energy.

1. REIT Structure Basics

As defined by the Securities and Exchange Commission (SEC), a REIT is a "company that owns—and typically operates—income-producing real estate or real estate-related assets."[122] If a company wishes to qualify as a REIT, a company must: (1) pay out at least ninety percent of its taxable income annually in the form of dividends to shareholders; (2) be an entity that would be taxable as a corporation but for its REIT status; (3) be managed by a board of directors or trustees; (4) have shares that are fully transferable; (5) have a minimum of one hundred shareholders after its first year as a REIT; (6) have no more than fifty percent of its shares held by five or fewer individuals during the last half of the taxable year; (7) invest at least

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solar-installation-costs-and-open-market-securitized-portfolios-standardize-.

118. Bradley K. Krehely, Note, *Government Sponsored Enterprises: A Discussion of the Federal Subsidy of Fannie Mae and Freddie Mac*, 6 N.C. BANKING INST. 519, 536 (2002).

119. David Reiss, *The Federal Government's Implied Guarantee of Fannie Mae and Freddie Mac's Obligations: Uncle Sam Will Pick Up the Tab*, 42 GA. L. REV. 1019, 1023 (Summer 2008).

120. *Id.*

121. *Id.*

122. *Real Estate Investment Trusts (REITs)*, U.S. SEC. & EXCH. COMM'N, http://www.sec.gov/answers/reits.htm (last visited Dec. 6, 2013) [hereinafter U.S. SEC. & EXCH. COMM'N].

seventy-five percent of its total assets in real estate assets and cash; (8) derive at least seventy-five percent of its gross income from real estate related sources, including rents from real property and interest on mortgages financing real property; (9) derive at least ninety-five percent of its gross income from such real estate sources and dividends or interest from any source; and (10) have no more than twenty-five percent of its assets consist of non-qualifying securities or stock in taxable REIT subsidiaries.[123]

The three primary categories of REITs are: (1) equity-based REITs, (2) mortgage-based REITs, and (3) hybrid REITs.[124] Equity REITs focus on property ownership by owning, investing, managing, or developing.[125] Its revenue comes "primarily from income generated by rental and lease payments" from the property.[126] Some equity REITs become sector-specific, focusing only on properties owned by certain sectors, such as healthcare.[127] Mortgage-based REITs, on the other hand, specialize in financing activities and do not own any real property.[128] Essentially, mortgage REITs generate their revenue from the interest earned on loans they make to real estate owners.[129] Equity REITs are significantly more popular than their financing counterpart.[130] Lastly, hybrid REITs combine the equity and mortgage structures, effectively investing in both properties and mortgages.[131]

Within these two core REIT types, there are three REIT structures. First, a traditional REIT owns its assets directly.[132] In an Umbrella Partnership REIT (often referred to as an UPREIT), REIT owners combine to create an operating partnership, issuing units of ownership.[133] This structure permits the owners to defer their capital gains taxes until the units are transferred to common stock.[134] Lastly, a DownREIT permits the REIT to use its partnership units to purchase property, and makes it subordinate to the REIT

123. *See* 26 C.F.R. § 1.856-1 (2013).

124. Jack H. McCall, *A Primer on Real Estate Trusts: The Legal Basics of REITs*, 2 TRANSACTIONS: TENN. J. BUS. L. 1, 3 (2001).

125. *Id.*

126. *Id.*

127. *See* Micah W. Bloomfield & Mayer Greenberg, *REITs: Overview*, PRAC. LAW CO. 1 (Apr. 2011), http://www.stroock.com/SiteFiles/Pub1053.pdf.

128. *See* McCall, *supra* note 124, at 3.

129. *Id.*

130. *The Basics of REITs*, REIT.COM, http://www.reit.com/REIT101/REITFAQs/BasicsOfREITs.aspx (last visited Dec. 6, 2013) [hereinafter *Basics of REITs*].

131. U.S. SEC. & EXCH. COMM'N, *supra* note 122.

132. *Basics of REITs*, *supra* note 130.

133. Lee A. Chilcote & Glenn Morrical, *UPREIT Transactions: Understanding the Benefits and Features*, FINDLAW (Mar. 26, 2008), http://corporate.findlaw.com/corporate-governance/upreit-transactions-understanding-the-benefits-and-features.html.

134. *Id.*

itself.[135] There are also slight variations to these models such as the paper-clip REIT, the paired-shared REIT, and the finite life REIT.[136]

From an investor's perspective, the most common positive investment characteristics associated with REITs are: (1) strong income and long-term growth; (2) higher dividends than most other equity investments; (3) liquidity, especially for those REITs traded on public exchanges; (4) professional management benefits from the REIT owners; (5) oversight due to the corporate structure, specifically the independent directors of the REIT; (6) disclosure obligations which provide transparency; and (7) the general benefits of securitization—i.e., the pooling of the real estate properties which reduces the risk of any single one of the properties not performing.[137]

In 2012, there were over 1000 REITs according to the Internal Revenue Service.[138] In terms of publicly traded entities, there were 166 REITs registered with the Securities and Exchange Commission, with a combined equity market capitalization of $579 billion.[139]

2. History of REIT Investments

When President Eisenhower signed the Cigar Excise Tax Extension of 1960, he also signed into law the REIT Act,[140] which permitted small investors to aggregate their investments into a single business enterprise and gave them access to larger and previously unavailable investment opportunities.[141] Due to early structural design inefficiencies like the legal requirement that a REIT could only own (and not operate or manage) its properties and the REIT's vulnerability to interest rate fluctuations and relative tax benefits of other investment vehicles like partnerships, the REIT industry experienced two and a half decades of slow growth.[142] REITs, because they were initially designed to be entirely passive investment structures, were not taxed at the corporate level, and instead, were permitted to deduct the amount distributed as dividends to shareholders.[143]

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135. Nilene R. Evans et al., *Frequently Asked Questions About Real Estate Investment Trusts*, MORRISON & FOERSTER LLP 5 (2013), http://www.mofo.com/files/Uploads/Images/FAQ_REIT.pdf.

136. *Id.* at 6–7.

137. *Reasons for REIT Investment*, REIT.COM, http://www.reit.com/REIT101/REITFAQs/ReasonsForREITInvestment.aspx (last visited Dec. 6, 2013).

138. *Basics of REITs*, *supra* note 130.

139. *Id.*

140. *REIT Industry Timeline: Celebrating 50 Years of REITs and NAREIT*, REIT.COM, http://www.reit.com/timeline/timeline.php (last visited Dec. 6, 2013).

141. McCall, *supra* note 124, at 2.

142. *Id.*

143. Jennifer Stonecipher, Note, *From One Pocket to the Other: The Abuse of Real Estate*

The Tax Reform Act of 1986 stimulated the REIT investment industry by limiting the benefits of other similar investment vehicles, particularly partnerships, and repealing accelerated depreciation previously available to real estate.[144] This created a large group of real estate-oriented investors seeking income-producing opportunities and permitted REITs to own, manage, and operate most of their income-producing properties.[145] Following the depression in the real estate industry in the early 1990s, credit and capital for commercial real estate dried up.[146] As a result, private real estate companies determined, somewhat accurately, that REITs were the best vehicle to access capital for their real estate-related ventures.[147]

3. REITs and Renewable Energy

The connection between real estate and renewable energy is a natural one: you need real estate, sometimes in large acreage, to produce renewable energy, and typically, the more real estate you have, the greater your potential renewable energy output.

Renewable energy financing can benefit from the REIT structure in four ways, all of which are independent of tax equity financing, and may even help renewable energy projects to reach profitability without any tax credit assistance: (1) using existing property to build solar and renewable projects; (2) purchasing large scale renewable projects on land used exclusively for renewable projects, such as a solar plant or a wind farm; (3) securitizing PPAs from homeowners and/or commercial businesses; and (4) securitizing solar lease agreements made to homeowners and/or commercial businesses.[148] It is worth noting that the design of all of these options is not dependent on the existence of tax credits, which may expire or fluctuate. The investment risk and potential returns associated with the produced security, however, will be affected, at least in part, by whatever government subsidy exists. Perhaps the greatest benefit of all of these models could be the application of the renewable energy managerial skills of the REIT owner to many renewable energy projects under its limited control. Lastly, there is no reason to believe that the ninety percent distribution requirement of REITs

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Investment Trusts Deductions, 72 MO. L. REV. 1455, 1458 (2007).

144. McCall, *supra* note 124, at 2.

145. *Id.*

146. *The REIT Story*, ECO MUNICH, http://www.reit.de/english/reit.htm (last visited Dec. 6, 2013).

147. *Id.*

148. *See generally* Joshua L. Sturtevant, *The S-REIT: An Investment-Driven Solution to Solar Development Problems*, GW SOLAR INST. (Dec. 2011), http://www.acore.org/author/turner/page/29/ (proposing the creation of a solar REIT, referred to as an S-REIT by the NREL and legal solar advocate Josh Sturtevant).

would have any effect on renewable energy operations more than any other type of operations.

Two IRC tax requirements limit these proposals: the income test and the asset test. The income test requires that seventy-five percent of a REIT's income must come from a narrow list of approved sources,[149] which usually includes rent and excludes renewable energy. The asset test requires that seventy-five percent of the REIT's assets be "real property," a definition that excludes renewable energy projects.[150] There are some exceptions in the Internal Revenue Code that permit fifteen percent of income to come from personal property related to real property, and it is more likely that income from a PPA be considered personal property as opposed to real.[151] Either way, the renewable energy input is severely limited.

The first proposal, building on existing REIT-owned property, is currently being utilized, although to a limited extent. Because REITs already own substantial property, they can simply build renewable projects (such as wind turbines or solar panels) on these properties as a way to increase and diversify income.[152] Certain established REITs are already doing this,[153] but more can benefit. ProLogis, for example, a publicly traded REIT that owns more than 600 million square feet, began building solar panels on its building rooftops.[154] Rather than selling its power units to its customers, ProLogis sells them wholesale to utility providers.[155] Its efforts are, unfortunately, limited by the tax code and REIT requirements. Because renewable energy projects are not currently considered "real property," a REIT cannot have more than twenty-five percent of its assets in renewable projects, and because renewable energy profits are likely not an approved income source, income from renewable energy project is capped at five percent.[156] If the IRS were to permit renewable energy projects to be considered "real property" and to include income from PPAs among the qualified sources of income (more akin to rent), then it could swiftly enable this form of renewable energy REIT to develop and, in turn, expand the potential

149. David Feldman et al., *The Technical Qualifications for Treating Photovoltaic Assets as Real Property by Real Estate Investment Trusts (REITs)*, NAT'L RENEWABLE ENERGY LAB. 3 n.5 (June 2012), http://www.nrel.gov/docs/fy12osti/55396.pdf.

150. *Id.* at 3.

151. Sturtevant, *supra* note 148, at 14–15.

152. Michael Mendelsohn, *Tapping the Capital Markets: Are REITs Another Tool in Our Toolbox?*, RENEWABLE ENERGY PROJECT FIN. (Feb. 27, 2012, 9:00 AM), https://financere.nrel.gov/finance/content/capital-markets-reit-real-estate-investment-trust-renewable-energy-project-finance-prologis-KIMCO.

153. *Id.*

154. *Id.*

155. *Id.*

156. Feldman et al., *supra* note 149, at 3.

renewable energy investor pool and reduce financing costs for renewable energy developers.

The other three proposals are also dependent, to some degree, on the IRS's interpretations of the tax code. For our purposes, I will assume that the IRS has issued a new interpretation, or amended its language to allow payments from renewable energy leases and power purchase agreements to satisfy the income test, and solar panels and wind turbines to satisfy its definition of real property.

The second proposal suggests a REIT owner purchase land viable for renewable energy development, lease it to large-scale wind or solar developers, pool the leases together, and market them to investors as a REIT security. This would help to alleviate issues with the income test, as the income would be derived from rent to the renewable energy developers, but the asset test would still not be satisfied under the current interpretations.

The third and fourth examples operate in a manner similar to the mortgage REIT model or green ABS structure, which package thousands of real estate mortgages. My proposed model suggests REITs purchase the hundreds or thousands of equipment leases or PPAs from individuals and compile them in a REIT security. Help from the tax code, in both the income and asset definitions, is necessary here. Efforts to standardize the transaction would be incredibly helpful to this form of REIT, as the number of individual asset transactions held by the REIT will likely be high.

C. Green Master Limited Partnerships

Master Limited Partnerships (MLPs), like REITs, utilize securitization to package assets and ultimately, could decrease financing costs and expand the investor base for renewable energy investment. MLPs and REITs are similar in their tax protections and access to the public equity markets, but while an REIT's core assets are real estate related, an MLP's core assets are the underlying operating companies that it owns.[157] Additionally, REITs are structured as corporations, while MLPs are structured as partnerships.[158] This section urges legislators to consider using this proven tool to connect renewable energy projects with this financial structure, and amending the tax code to do so. It does so by discussing: (1) MLP structure basics; (2) a

157. *See* Molly F. Sherlock & Mark P. Keightley, *Master Limited Partnerships: A Policy Option for the Renewable Energy Industry*, CONG. RES. SERV. 3 (June 28, 2011), http://www.ieeeusa.org/policy/eyeonwashington/2011/documents/masterlmtdpartnerships.pdf.

158. *See* Sean Pattap, *Thirst for Yield Leads Fixed-Income Investors to U.S. Equity REITs, MLPs*, COM. PROP. EXEC. (Apr. 17, 2013), http://www.cpexecutive.com/newsletters/capitalmarkets-newsletter/reitscolumn/thirst-for-yield-leads-fixed-income-investors-to-u-s-equity-reits-mlps/.

historical overview of MLP structure and investments; (3) the MLP Parity Act; and (4) how MLPs specifically can help stimulate renewable energy financing.

1. MLP Structure Basics

An MLP is a business structure that is taxed similar to a partnership, but whose stock is traded similar to corporate stock on the open markets.[159] The benefits of the MLP structure are mostly tax based and essentially permit the entity to pay only one level of tax (at the income level, avoiding corporate-level), because the income passes through the partnership to the unit holders, who pay according to the individual tax code.[160] C-Corporations, on the other hand, typically pay two levels of taxes (at the corporate level and the individual level).[161] Any limited partnership that produces the required level of qualifying income pays zero entity level taxation.[162] The benefits are, in effect, that "an MLP must generate $1.54 of income for an equity holder to have one dollar of after-tax income, although a corporation must generated $2.20 of income for its equity holder to have one dollar after-tax income."[163]

Typically, MLPs consist of one general partner, such as a corporation or limited liability company acting as a special purpose vehicle, along with thousands of limited partners, who are public investors and provide most of the capital to the MLP.[164] MLPs generally own and operate their business assets through a subsidiary or operating company.[165] The general partner typically receives two percent of the annual cash flow, called an incentive distribution right, in return for taking on certain risks in the company.[166] This fee structure is also designed to incentivize the general partner to run the company effectively and in a way that best maximizes returns.[167]

Because of its ability to avoid the double-taxation problem of other entities, MLPs are able to attract more capital at a lower cost from investors

159. Sherlock & Keightley, *supra* note 157, at 1.
160. *Id.*
161. *Id.* at 1–2.
162. Simon Maher, *Corporate and LLC Taxation Compared*, LLC MADE EASY, http://www.llc-made-easy.com/LLC-and-corporate-tax.html (last visited Dec. 6, 2013). This statement assumes that for most corporations paying entity level tax (which is simply the tax that the corporation pays in a similar manner to what an individual would pay), their tax bracket is in or close to the highest marginal tax bracket for individuals, approximately thirty-five percent. *Id.*
163. John Goodgame, *Master Limited Partnership Governance*, 60 BUS. LAW. 471, 472 (2005).
164. Sherlock & Keightley, *supra* note 157, at 2.
165. *Id.* at 3.
166. *Id.* at 2.
167. *Id.*

seeking the higher returns of limited taxation, which, in turn, corresponds to lower financing costs for the business.[168] Proponents argue that, "MLPs could substantially reduce the cost of financing renewables, which currently rely on the participation of the tax equity market, which primarily consists of a small set of large investment banks."[169]

Today, there are about 100 MLPs with a total market cap of over $350 billion.[170] Eighty percent of the current MLP market is made up of oil and gas companies.[171] Already established energy-market stimulators, MLPs are well positioned to embrace the renewable energy capital markets.

2. A Brief History of MLPs

MLPs were designed following the energy crisis in the 1970s as a way to stimulate domestic energy growth.[172] While the first MLP was designed in 1981,[173] the modern benefits of its structure were not established until the Revenue Act of 1987.[174] This Act exempted any publicly traded partnership that received ninety percent or more of its income from "qualifying income," classified by the Internal Revenue Code as interest, dividends, real property rents, gain from the sale or disposition of real property, or "income and gains derived from the exploration, development, mining or production, processing, refining, transportation (including pipelines transporting gas, oil, or products thereof), or the marketing of any mineral natural resource," including oil and natural gas.[175] The Emergency Economic Stabilization Act of 2008 amended the qualifying income definition to include transportation of specific renewable and alternative fuels, such as ethanol and biodiesel.[176] This language opened up the corporate structure to many new fossil fuel companies, while specifically excluding renewable energy projects. Section 613 of the IRC requires that the qualifying energy sources be produced from

168. *Id.*

169. Jordan M. Collins & David J. Leiter, *Congress Proposes Expanding Master Limited Partnerships to Renewable Energy & Biofuel Projects,* NAT'L L. REV. (June 18, 2012), http://www.natlawreview.com/article/congress-proposes-expanding-master-limited-partnerships-to-renewable-energy-biofuel-.

170. Mike Kapsch, *MLPs: A Potential Game-Changer for Renewable Energy*, INV. U (Aug. 8, 2012), http://www.investmentu.com/2012/August/renewable-energy-mlps.html.

171. *Id.*

172. John Joshi & Malay Bansal, *The Case for Master Limited Partnerships*, BREAKING ENERGY (July 20, 2011, 6:00 AM), http://energy.aol.com/2011/07/20/the-case-for-master-limited-partnerships/.

173. Goodgame, *supra* note 163, at 485.

174. Omnibus Budget Reconciliation Act of 1987, Pub. L. No. 100-203, 101 Stat. 1330 (codified as amended in scattered sections of 26 U.S.C.).

175. I.R.C. §§ 7704(c)(2), (d) (2008).

176. Sherlock & Keightley, *supra* note 157, at 7.

"depletable" resources.[177] As previously mentioned, today the majority of the MLP market consists of fossil fuel-related companies.

3. MLPs Applied to Renewable Energy

Expanding the definition of qualified income for MLPs to specifically include solar and wind would help to level the playing field with fossil fuel industries, which often take advantage of this corporate structure's benefits. Here is how it could work: the general partner, along with dozens or hundreds of limited partners, would control an operating company, which would own a number of renewable energy projects. The income from the PPAs would be distributed out to the investors in the form of dividends each year. The operating company could own solely solar projects, or choose to diversify among various renewable energy projects or even among *all* energy projects (creating a mix of fossil fuels and renewables). Variations among project size would also help to diversify risk. Additionally, a single experienced operating manager could add value by providing his or her expertise to the owned properties. The same features that will asset any green ABS or green REIT development—standardization of contractual forms and transactions, historical data providing adequate risk analysis, decreased dependency on tax credits, and due diligence initiatives of ratings agencies—will also help to prime this market for MLP securitization.

Investors of all shapes and sizes are familiar with this structure and its connection to the energy market, and many may view MLPs as a way to diversify their investments into the growing renewable energy space. Expanded investor demand, combined with a MLP structure, will help to promote greater and cheaper financing for renewable energy projects.

4. The MLP Parity Act

In June 2012, Senators Chris Coons of Delaware and Jerry Moran of Kansas introduced the MLP Parity Act, a bill that intends to amend Section 7704 of the tax code to enable MLPs to own and finance renewable energy projects,[178] and to take advantage of the benefits described in the previous section. Specifically, the bill seeks to expand the definition of "qualified" sources to include clean energy resources and infrastructure projects.[179] Energy sources explicitly included are wind, closed and open loop biomass,

177. Chris Coons, *The Master Limited Partnership Parity Act*, U.S. SEN. CHRISTOPHER COONS OF DEL., http://www.coons.senate.gov/issues/master-limited-partnerships-parity-act (last visited Dec. 6, 2013).

178. Collins & Leiter, *supra* note 169.

179. *Id.*

geothermal, solar, municipal solid waste, hydropower, marine and hydrokinetic, fuel cells, and combined heat and power.[180] The MLP Parity Act leaves the current MLP entity intact, and all projects currently eligible to structure as MLPs would continue to qualify exactly as they would under existing law.[181] The Act is just two hundred words long,[182] has been described as bipartisan,[183] and is sure to run up against oil and gas lobbying limitations. If this legislation is passed, securitization through the MLP structure could soon be realized, bringing an estimated $6 billion of capital immediately into MLP renewable energy investment,[184] with billions more likely in the pipeline.

CONCLUSION

Climate change is upon us. It is tempting to feel that the need to think beyond conventional approaches is necessary to deal with this unconventional problem. I agree that large-scale commitment is necessary to stimulate a large-scale response. Washington's inconsistency, however, which in part stems from a failure to grasp the magnitude of human effects on climate, limits the tools to those within our comfort zone. Securitization implementation is a proven remedy to financing difficulties, and does not strain conventional policy or financial reasoning.

Of course, what would make securitization more appealing to investors and banks is a concentrated and firm government commitment to renewable energy output, and building a renewable energy infrastructure in the same way that it did for fossil fuels. This could come in the form of cap-and-trade policy or a national Renewable Portfolio Standard. Gridlock in Washington, D.C., ingrained corporate welfare for energy companies, and strong lobbying on behalf of retaining that welfare makes committed change difficult.

In 2011, the International Energy Agency estimated that $10.3 trillion was required over the next twenty years to fund alternative energy projects that would simply maintain the climate stabilization target of not allowing temperatures to rise by more than two degrees Celsius.[185] Given the fact that

180. *Id.*

181. *Id.*

182. Master Limited Partnerships Parity Act, H.R. 6437, 112th Cong. § 2d (2012), *available at* http://www.govtrack.us/congress/bills/112/hr6437/text.

183. Robert S. Winner, *Bi-Partisan Introduction of the Master Limited Partnership Act Seeks to Level Playing Field for Development of Renewable Energy*, SEYFARTH SHAW LLP (Sept. 28, 2012), http://www.seyfarth.com/publications/OMM092812.

184. *Id.*

185. John Joshi, *Financing Renewable Energy – A Securitization Approach*, RENEWABLE ENERGY MAG. (June 20, 2011), http://www.renewableenergymagazine.com/article/financing-renewable-energy-ndash-a-securitization-approach.

climate estimates have been recently revised, indicating that we may have reached this two degree increase sooner than anticipated,[186] these necessary funding estimates are sure to increase. The securitization of renewable energy projects—in the form of a green ABS market, REITs, and MLPs—will be a consistent stabilizing force in renewable energy project financing, and will help to level the energy playing field.

During the writing of this Article, experts from the Brookings Institute and Stanford University wrote a policy proposal, urging lawmakers to permit renewable energy financing to take advantage of MLP and REIT structures.[187] In doing so, the authors framed the need for renewable energy financing improvement as, among other incentives, one of nationalism. They argued that the U.S. must pursue innovation and flexibility in order to remain competitive in the world's race for renewables.[188] I agree. The world is thirsting for a new energy structure, one more in line with our climate goals. Currently running in fragmented lanes, the U.S. has the demand, financial tools, and the capital available to move our energy market to a new frontier. All that is necessary is a slight shove to put lawmakers on the same track.

186. Tom Schueneman, *Climate Change Risk Looms as Two Degree Limit Now Unlikely*, THE ENERGY COLLECTIVE (Dec. 6, 2012), http://theenergycollective.com/globalwarmingisreal/153056/climate-change-risk-looms-2-degree-limit-now-unlikely.

187. *See generally* Felix Mormann & Dan Reicher, *Smarter Finance for Cleaner Energy: Open Up Master Limited Partnerships (MLPs) and Real Estate Investment Trusts (REITs) to Renewable Energy Investment*, REMAKING FEDERALISM/RENEWING THE ECONOMY (Nov. 2012), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2174650.

188. *Id.* at 1–2.